

Systems Integration Division

# **SID IT Project Oversight Framework Findings Report**

• • • • • • • •

March 28, 2003

Health and Human Services Data Center

## Revision History

REVISION	DATE OF RELEASE	PURPOSE
Initial Draft	3/28/03	Initial Release

## Table of Contents

<b>1. EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>2. INTRODUCTION.....</b>	<b>2</b>
2.1 BACKGROUND.....	2
2.2 PURPOSE .....	2
2.3 REFERENCED DOCUMENTS .....	2
<b>3. SID PROJECT BACKGROUND.....</b>	<b>3</b>
3.1 PROJECT DESCRIPTIONS .....	4
3.1.1 Case Management Information and Payrolling System (CMIPS).....	4
3.1.2 Child Welfare Services/Case Management System (CWS/CMS).....	4
3.1.3 Electronic Benefit Transfer (EBT) .....	4
3.1.4 Interim Statewide Automated Welfare System (ISAWS).....	5
3.1.5 Statewide Automated Welfare System Project (SAWS).....	5
3.1.6 Statewide Fingerprint Imaging System (SFIS).....	5
3.1.7 Welfare Data Tracking Implementation Project (WDTIP) .....	5
<b>4. ASSESSMENT METHODOLOGY .....</b>	<b>6</b>
4.1 METHODOLOGY .....	6
4.2 ASSESSMENT CONSIDERATIONS .....	6
<b>5. ASSESSMENT FINDINGS .....</b>	<b>8</b>
5.1 PROJECT CLASSIFICATION .....	8
5.1.1 Project Size.....	8
5.1.2 Project Manager Experience.....	8
5.1.3 Team Experience.....	9
5.1.4 Project Type .....	9
5.1.5 Overall Project Rating.....	10
5.2 PROJECT MANAGEMENT REQUIREMENTS .....	11
5.2.1 Planning and Tracking.....	11
5.2.2 Procurement.....	13
5.2.3 Risk Management.....	14
5.2.4 Communications.....	14
5.2.5 System Engineering.....	15
5.2.6 Project Management Practices and Processes.....	16
5.3 PROJECT MANAGEMENT CAPABILITIES .....	16
5.3.1 IT Management Structure and Environment.....	17
5.3.2 Centralization of PM Support.....	17
5.3.3 Training and Certification of Project Managers.....	17
5.3.4 Project Management Methodology.....	18
5.3.5 System Management Methodology.....	18
5.3.6 Enterprise Architecture Strategy.....	19

5.3.7	<i>Computation of the IT Management Structure and Environment Score.....</i>	19
5.4	RISK MANAGEMENT AND ESCALATION PROCEDURES .....	20
5.5	INDEPENDENT OVERSIGHT REQUIREMENTS .....	20
<b>6.</b>	<b>SUMMARY OF GAPS .....</b>	<b>22</b>
6.1	PROJECT CLASSIFICATION GAPS .....	22
6.1.1	<i>Project Manager and Staff Experience .....</i>	22
6.1.2	<i>Project Type .....</i>	22
6.2	PROJECT MANAGEMENT REQUIREMENTS GAPS .....	22
6.2.1	<i>Work Planning and Tracking at the Task Level.....</i>	23
6.2.2	<i>Cost and Software Size Estimates and Tracking.....</i>	23
6.2.3	<i>Documented Plans.....</i>	23
6.2.4	<i>Issue Tracking.....</i>	24
6.2.5	<i>Enterprise Architecture Planning.....</i>	24
6.2.6	<i>Risk Management.....</i>	24
6.2.7	<i>Formal User/Sponsor Participation and Sign-Off Procedures.....</i>	24
6.2.8	<i>Requirements Traceability, Code Reviews and Defect Tracking.....</i>	24
6.2.9	<i>QA and IV&amp;V.....</i>	25
6.3	PROJECT MANAGEMENT CAPABILITY GAPS .....	25
6.3.1	<i>Centralized PM Support.....</i>	25
6.3.2	<i>Training and Certification of Project Managers.....</i>	25
6.3.3	<i>System Management Methodology.....</i>	25
6.3.4	<i>Enterprise Architecture Strategy.....</i>	25
<b>7.</b>	<b>INITIATIVES TO ADDRESS GAPS .....</b>	<b>26</b>
7.1	SID QUALITY ASSURANCE WORKING GROUP (QAWG).....	26
7.2	PROJECT OFFICE SUPPORT TOOLS (POST) .....	26
<b>8.</b>	<b>CONCLUSIONS .....</b>	<b>27</b>
<b>APPENDIX A - ACRONYMS &amp; ABBREVIATIONS .....</b>		<b>A-1</b>
<b>APPENDIX B - SID LIFE CYCLE AND PROJECT PHASES .....</b>		<b>B-1</b>
<b>APPENDIX C - SID POLICY FOR RISK MANAGEMENT.....</b>		<b>C-1</b>
<b>APPENDIX D - AREAS OF CONCERNS AND NEED FOR CLARIFICATION .....</b>		<b>D-1</b>

---

**List of Tables**

TABLE 1. REFERENCED DOCUMENTS .....2

TABLE 2. SUMMARY OF GAPS .....22

TABLE 3. QAWG SCHEDULE .....26

**List of Figures**

FIGURE 1. SID PROJECTS .....3

FIGURE 2. SID PROJECT LIFE CYCLE PHASES .....7

FIGURE 3. SID PROJECTS LIFE CYCLE ..... B-1

## 1. EXECUTIVE SUMMARY

The Health and Human Services Data Center's (HHSDC) System Integration Division (SID) is responsible for the management and operation of seven large-scale automation projects in support of California Department of Social Services' (CDSS) programs. With the release of the Department of Finance's (DOF) Budget Letter 03-04, Statewide Information Technology Oversight Framework, SID began performing self-assessments against the criteria in the budget letter to identify gaps and areas of concern.

This report contains the results of the assessment performed by SID staff. The following key findings were identified. Of these themes, two are beyond the control of SID. The remaining gaps are either currently being worked or are planned for review and action.

THEME	STATUS
Staff Training and Experience	In Work
Work Planning at the Task Level	Planned for Review
Cost and System Size Estimates	Planned for Review
Documented Plans	In Work
Issue Tracking	In Work
Enterprise Architecture	Planned for Review
Risk Management	In Work
User/Sponsor Participation	No Control
Requirements/Code/Defects	Planned for Review
QA, IV&V and PMO Support	No Control

Section 7 discusses some of the initiatives currently in work to address the gaps. These initiatives are being planned and coordinated to ensure participation and coordination across all projects. The plan is to begin work on these initiatives in April 2003 and complete by early 2004. Existing resources will be used to execute the plan to ensure project representatives fully understand the changes in process and to assist with buy-in at the project level. The plan will be incorporated into SID's current plans for process improvement and will be given priority over other existing initiatives which were currently planned.

## **2. INTRODUCTION**

### **2.1 Background**

The Department of Finance (DOF) published Budget Letter 03-04 on February 7, 2003. This budget letter describes the statewide IT Project Oversight Framework document which provides the minimum requirements for project management and project oversight functions, activities, and reporting for IT projects.

The IT Project Oversight Framework document will be utilized by DOF's Technology Oversight and Security Unit (TOSU), to assess departments and agencies on their project management and project oversight capabilities. It will also be used to establish the baseline of project management and oversight activities for the State.

### **2.2 Purpose**

This report documents the findings of the Health and Human Services Data Center (HHSDC) Systems Integration Division's (SID) self-assessment of current project management practices and project oversight functions against the IT Project Oversight Framework.

### **2.3 Referenced Documents**

The following documents were used in the creation of, or are referenced in this document.

**Table 1. Referenced Documents**

<b>Title</b>	<b>Author</b>	<b>Date</b>
BL 03-04 DOF Project Management and Oversight Framework	DOF TOSU	2/7/2003
BPSG Charter	BPSG	12/18/2002
BPSG Project Plan	BPSG	2/8/2003
POST Charter	BPSG	7/16/2001

### 3. SID PROJECT BACKGROUND

In 1995, responsibility for a number of large Information Technology (IT) projects was transferred from the California Department of Social Services (CDSS) to SID. The following are the primary SID projects<sup>1</sup>:

- In-Home Supportive Services' Case Management Information and Payrolling System (CMIPS)
- Child Welfare Services/Case Management System (CWS/CMS) Maintenance and Operations (M&O)
- Electronic Benefit Transfer (EBT)
- Interim Statewide Automated Welfare System (ISAWS)
- Statewide Automated Welfare Systems (SAWS) Project Management
- Statewide Fingerprint Imaging System (SFIS)
- Welfare Data Tracking Implementation Project (WDTIP)

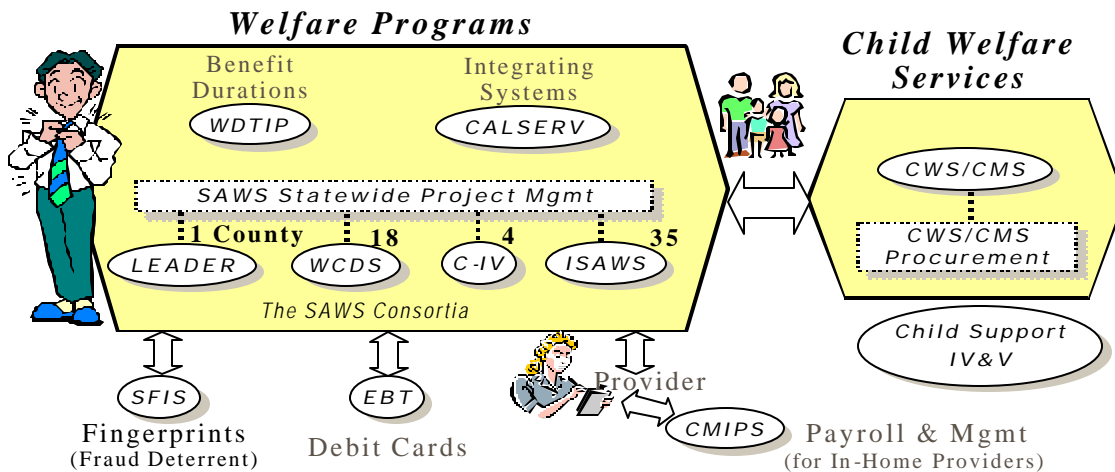


Figure 1. SID Projects

<sup>1</sup> In addition to the projects described above, SID also manages the Independent Verification and Validation (IV&V) contract for the Department of Child Support Services/Franchise Tax Board automation project. Because the focus of SID's effort is contract management and oversight of the IV&V contractor, it has not been included in the analysis for this report.



There are several unique characteristics that distinguish the SID projects, including:

- Planning and implementation costs of \$15 million to \$800 million, and annual maintenance and operations costs ranging from \$2 to \$120 million
- Projects which support welfare and welfare-related programs in the State
- Users who are geographically distributed throughout the State
- Users who may be running several of SID's applications as well as applications from other departments and their own local organization
- Users who have varied business practices by region
- Complex governance and stakeholder relationships involving federal, state and county partnerships, as well as advocacy groups and labor unions
- Multiple funding sources and regulations at federal, state and county levels
- A Maintenance and Operations (M&O) phase which may include several large-scale changes in the millions of dollars
- Procurement phases which typically last two to five years

### **3.1 Project Descriptions**

This section contains a brief description of the seven primary SID projects.

#### **3.1.1 Case Management Information and Payrolling System (CMIPS)**

The Case Management Information and Payrolling System provides case management and payroll processing for the In-Home Supportive Services (IHSS) Program. This project will replace a legacy system with a new system that is responsive to the needs of the county IHSS social workers, recipients, and providers as well as the state staff at the Disability and Adult Programs Division. This project is currently in the procurement phase.

#### **3.1.2 Child Welfare Services/Case Management System (CWS/CMS)**

The Child Welfare Services/Case Management System provides case management and reporting for the Child Welfare Services Program. It provides the county social welfare staff a comprehensive system to record information about children, families, service providers, foster parents and county staff. All fifty-eight counties utilize this system. This project is currently in the maintenance and operations (M&O) phase, as well as in the procurement phase to obtain a new M&O contractor.

#### **3.1.3 Electronic Benefit Transfer (EBT)**

The Electronic Benefit Transfer project allows the use of debit card technology and retailer point-of-sale terminals to automate benefit authorization, delivery, redemption, and financial settlement for food stamps and optionally, cash benefits for all fifty-eight counties. This project is in the middle of implementation. The project is also in the M&O phase to support those counties which have already implemented.

### **3.1.4 Interim Statewide Automated Welfare System (ISAWS)**

The Interim Statewide Automated Welfare System provides the automation of public assistance programs such as CalWORKs, Food Stamps, Medi-Cal, County Medi-Cal Services Program (CMSP), Foster Care, and Refugee Assistance for 35 counties. This project is one of the four SAWS consortia (refer to Section 3.1.5) and is the only consortia system operated by the State. This project is currently in the maintenance and operations (M&O) phase, as well as in the procurement phase to obtain a new M&O contractor.

### **3.1.5 Statewide Automated Welfare System Project (SAWS)**

The Statewide Automated Welfare System (SAWS) Project provides general project management, oversight, and support for all components of the SAWS Project. This project consists of the automation of county welfare business processes in California and consists of several components. Under the SAWS multiple county consortium strategy, all fifty-eight counties aligned themselves into four consortia. Each SAWS country consortium is responsible for the design, development, implementation, maintenance, and operations of its SAWS system. The four consortia are:

- The Interim Statewide Automated Welfare System (ISAWS)
- The Los Angeles Eligibility, Automated Determination, Evaluation and Reporting (LEADER)
- The Welfare Client Data System (WCDS)
- Consortium IV (C-IV)

### **3.1.6 Statewide Fingerprint Imaging System (SFIS)**

The Statewide Fingerprint Imaging System provides all county welfare offices with a biometric tool to detect and deter multiple aid fraud. This project is currently in the M&O phase and is in pre-planning to begin the procurement phase for a new M&O contractor.

### **3.1.7 Welfare Data Tracking Implementation Project (WDTIP)**

The Welfare Data Tracking Implementation Project counts a recipient's CalWORKs and TANF programs time-on-aid to determine eligibility. This allows California's counties to comply with welfare reform time tracking requirements. This project is currently in the implementation and M&O phases.

## **4. ASSESSMENT METHODOLOGY**

This section describes the methods used to perform the gap analysis and develop the assessment findings.

### **4.1 Methodology**

The approach taken to perform this analysis was to review the DOF IT Project Oversight Framework requirements at both the individual project level and at the divisional level. Project staff, usually the project Quality Assurance (QA) staff, were asked to self-assess their project against the criteria and indicate their level of compliance. Division-level project support staff then consolidated the individual scores and comments into the ratings found in Section 5.

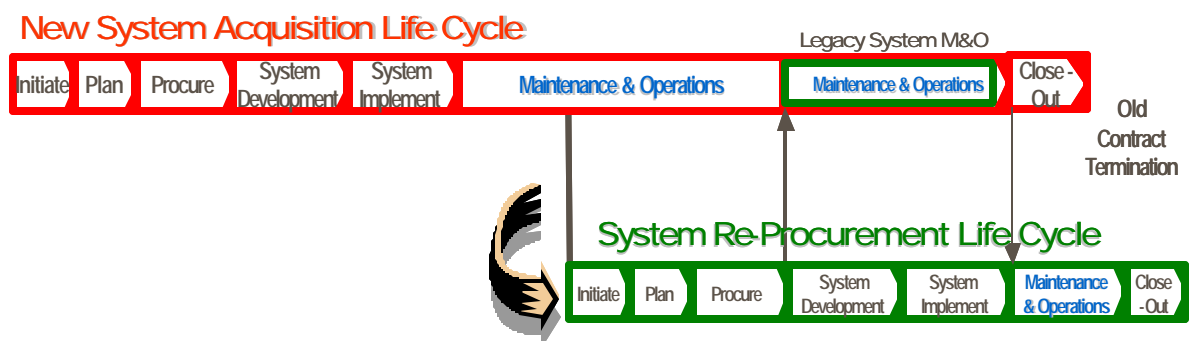
The assessment scores reflect the consolidation of the SID projects. The assessment steps outlined and described within each section of the document were used. The appropriate Project Management Assessment Form (Appendix B of the DOF IT Project Oversight Framework document) was filled out by each project depending upon their project classification (High, Medium, Low). For the purposes of consolidating the information at the divisional level however, this analysis was viewed from the perspective that SID projects, for the most part, are of High criticality for the required project management practices and processes.

### **4.2 Assessment Considerations**

When scoring the projects from the division perspective, the following aspects were considered.

#### Project Phase

The phase of the project is an important consideration in the assessment. Depending upon the phase, certain requirements will not be met yet because those specific requirements are involved in a later phase of the project. An example would be if the project is in the procurement phase, some of the System Engineering requirements would be documented in the project planning documents, but not in actual practice until the system development phase begins. The current project phase within the project lifecycle was taken into account when responding to the project classification requirement and the project management requirements. For more information on the SID project phases and life cycle, refer to Appendix B.



**Figure 2. SID Project Life Cycle Phases**

### Contract Type

The second factor considered is the contract type. Most of the projects utilize a fixed price, deliverable-based contract rather than a time and materials contract. For projects that use the time and materials contract type, deliverable expectation documents (DED)<sup>2</sup> usually are used to manage project costs similar to a fixed-price deliverable-based contract. In these cases, the critical need to track costs at the task level is unnecessary to manage actual costs of project work deliverables. The actual hours that a contractor expended on delivering a work product would not be a concern since the price and schedule for delivery are fixed.

<sup>2</sup> Deliverable Expectation Documents are used by the SID projects to establish the content, acceptance criteria, level of detail and schedule for deliverable development with a contractor prior to the contractor beginning work on the item. This method is used to ensure that a mutual agreement exists prior to beginning work in an effort to streamline the review and approval processes. The DED is approved by the State project manager and then used to evaluate the deliverable as part of the deliverable document review and acceptance procedure.

## 5. ASSESSMENT FINDINGS

This section describes the ratings and findings for the seven SID projects from the division's perspective.

### 5.1 Project Classification

The projects were assigned a rating of High, Medium, or Low depending upon four project specific factors:

- Project Size
- Project Manager Experience
- Project Team Experience
- Project Type

#### 5.1.1 Project Size

This factor rates the project on size, primarily based upon one time cost estimates and secondarily, upon project duration.

Step 1: Rate the project by estimated one-time costs at follows:

Estimated one-time Costs	Rating	SID Rating
Greater than \$10 million	High	X
\$5 million to \$10 million	Medium	
Under \$5 million	Low	

Step 2: Adjust low and medium ratings from Step 1 upward by one rating if the estimated period from project approval to initial implementation is greater than 24 months

SID Rating and Rationale: Based upon the criteria of one-time cost (planning and initial development costs) and estimated duration, all projects within SID would be rated as High.

#### 5.1.2 Project Manager Experience

This factor rates the risk/criticality based on the project manager's experience on similar efforts.

Project Manager	Rating	SID Rating
Has not completed a like project in a "key staff" role	High	
Has completed one like project in a "key staff" role	Medium	
Has completed two or more like projects in a "key staff" role	Low	X

**SID Rating and Rationale:** Based upon the criteria of project manager experience, SID would be rated Low. SID employs a mentoring project for all new managers, and where possible, provides career progression to successively larger projects (e.g., task lead, functional lead, assistant project manager, project manager).

### 5.1.3 Team Experience

This factor rates the risk/criticality based on the experience of the project team key staff. The project team consists of all project staff reporting to the state project manager, including contractor staff, if applicable.

Like Projects Completed by at Least 75% of Key Staff	Rating	SID Rating
None	High	
One	Medium	X
Two or more	Low	

**SID Rating and Rationale:** Based upon the criteria of team manager experience, projects within SID would be rated Medium. As stated above, SID state staff are generally provided successively more important positions. Thus many SID state staff may be new to their roles. In the case of consultant staff reporting to the state project manager, the staff generally have experience on two or more like projects (Low rating). However for this factor, a conservative rating of Medium was chosen.

### 5.1.4 Project Type

For this factor, the projects were rated based on the average of how the individual projects scored. The number in the ratings column below indicates the number of projects which were assessed at each rating level.

Component	Activity Category	Affected Element	Rating	SID Rating
Hardware	New Install	Local Desktop / Server	Low	
		Distributed / Enterprise Server	Medium	
	Update / Upgrade	Local Desktop / Server	Low	
		Distributed /Enterprise Server	Low	
	Infrastructure	Local Network / Cabling	Low	
		Distributed Network	Medium	4
		Data center / Network Operations Center	High	3
Software	Custom Development	Local Desktop / Server	Low	
		Distributed / Enterprise Server	High	5
	COTS Installation (new)	Local Desktop / Server	Low	
		Distributed / Enterprise Server	High	

Component	Activity Category	Affected Element	Rating	SID Rating
	Custom Update / Upgrade	Local Desktop / Server	Low	
		Distributed / Enterprise Server	High	
	COTS Update / Upgrade	Local Desktop / Server	Low	
		Distributed / Enterprise Server	Medium	2
	Infrastructure	Middleware	Medium	
		Layered Product	Medium	
		DBMS	Medium	6

**SID Rating and Rationale:** Based upon the criteria of project type, the SID would be High. In almost all cases, at least part of the system requires custom development (though it may be a small part (10-20%)). In addition due to the fact that SID's users are statewide, either a data center or distributed network is the norm. Thus to be conservative, a High rating was assessed.

### 5.1.5 Overall Project Rating

The individual factor rankings were entered into the following table to assist in the calculation of the project score. Use 3 for high, 2 for medium, and 1 for low.

	(a) Factor	(b) Rating
1	Size	High
2	Project Manager	Low
3	Project Team	Medium
4	Type	High
Total		9

Compute the project score by dividing the total from column (b) by four

Results	Project Rating
2.26 – 3.0	High
1.51 – 2.25	Medium
1.0 – 1.5	Low

**SID Rating and Rationale:** The computed score for SID would be Medium at 2.25.

## 5.2 Project Management Requirements

The required minimum project management practices and processes identified by the framework document are:

- Planning and Tracking
- Procurement
- Risk Management
- Communications
- System Engineering

The following sections will describe SID's current status in regards to the required minimum project management practices and processes for High criticality projects, to ensure a conservative assessment due to the varied ratings of the projects.

### 5.2.1 Planning and Tracking

Project Management Capability Assessment: High Criticality Projects

Activity	All	Some	None	Comment
<b>Planning and Tracking</b>				
Are business cases, project goals, objectives, expected outcomes, key stakeholders and sponsor(s) identified and documented?	X			In the project charter, master project plan and/or RFP/ITP and contract
Are detailed project plans with all activities (tasks), milestones, dates and estimated hours by task loaded into project management software? Are the lowest level tasks of a short duration with measurable outcomes?		X		In some cases, project plans are high-level due to the oversight nature of the project. Estimated hours are not always present or accurate due to fixed-price contracts.
Is completion of planned tasks recorded within project management software?		X		
Are actual hours expended by task recorded at least monthly within PM software?			X	Actual hours may be present for contractor staff on time and materials contracts, however accurate state staff hours and fixed price contract hours are not recorded. A comprehensive report is not possible.
Are estimated hours to complete by task recorded at least monthly within PM software?			X	Not used for fixed-price contracts. Time and materials contracts are not always tracked to the task level.
Is a project organization chart prepared and kept current?	X			



Activity	All	Some	None	Comment
Are there procedures for formal staff planning, including written roles and responsibilities, plans for staff acquisition, schedule for arrival and departure of specific staff, and staff training plans		X		SID's best practices website has minimum roles and responsibilities for each project function. Not all projects have formal staffing plans. Staff training plans are usually handled through IDPs.
Have project cost estimates, with supporting data for each cost category, been maintained?		X		Most projects submit BCPs and APDs which contain this information, but the level of supporting data by cost category varies.
Are software size estimates developed and tracked?		X		Used only on some projects. Tracking tends to be informal.
Are at least two software size estimation approaches used?		X		
Are independent reviews of estimates conducted?		X		In some cases, a consultant has been retained to review estimates. Estimates are reviewed by federal and state stakeholders.
Are actual costs for each cost category recorded as they are incurred?		X		Not recorded for all cost categories. Actual contract costs are always tracked.
Are actual costs regularly compared to budgeted costs?		X		Only for contract costs.
Is supporting data maintained for actual costs?		X		Only for contract costs.
Is completion status of work plan activities, deliverables, and milestones recorded, compared to schedule and included in a written status reporting process?	X			All SID projects submit division status reports to a website on a monthly basis (sidweb)
Is formal configuration control practiced, including a written configuration management plan covering change control/approval for key specification documents (e.g. contracts, requirement specifications and/or contract deliverables) and software products and specific staff roles and responsibilities for configuration management?		X		Most projects have a configuration management plan, however they often are focused strictly on contractor deliverables. Most projects use an automated document tracking system (iManage). Change control is practiced.
Are issues/problems and their resolution (including assignment of specific staff responsibility for issue resolution and specific deadlines for completion of resolution activities), formally tracked?		X		Due dates for issues are not always strictly enforced.

Activity	All	Some	None	Comment
Is user satisfaction assessed at key project milestones?		X		Users are encouraged to participate in review of key documents and in testing at various levels.
Is planning in compliance with formal standards or a system development life-cycle (SDLC) methodology?	X			Projects are required to follow the SID standard life cycle process for planning.
Is there formal enterprise architecture planning?			X	True architecture planning across projects, and in conjunction with CDSS (as the project sponsor) does not occur.
Are project closeout activities performed, including completion of a PIER, collection and archiving up-to-date project records and identification of lessons learned?	X			At present, no SID project has ever been closed out due to large-scale enhancements during M&O as a result of legislation and regulation changes. However, the required items are included in SID's life cycle process.

### 5.2.2 Procurement

#### Project Management Capability Assessment: High Criticality Projects

Procurement				
Activity	All	Some	None	Comment
Are appropriate procurement vehicles selected (e.g. CMAS, MSA, "alternative procurement") and their required processes followed?	X			
Is a detailed written scope of work for all services included in solicitation documents?	X			Documented in a Statement of Work
Are detailed requirement specifications included in solicitation documents?	X			Or included by reference
Is there Material participation of outside expertise (e.g. DGS, Departmental specialists, consultants) in procurement planning and execution?	X			CDSS Legal, DGS, HHSDC Acquisition Services Bureau, and industry experts are included as appropriate
For large-scale outsourcing, is qualified legal counsel obtained?	X			CDSS Legal is included, and where appropriate, private counsel with industry specific program knowledge.

### 5.2.3 Risk Management

Project Management Capability Assessment: High Criticality Projects

Activity	All	Some	None	Comment
<b>Risk Management</b>				
Is formal continuous risk management performed, including development of a written risk management plan, identification, analysis, mitigation and escalation of risks in accordance with DOF/TOSU Guidelines, and regular management team review of risks and mitigation progress performed?		X		SID revised their risk policy and standards in March to be compliant with the DOF TOSU guidelines. These changes are in the process of being implemented.
Does the management team review risks and mitigation progress at least monthly?		X		Project risks are recorded in monthly status reports and discussed at project and manager meetings monthly or biweekly.
Are externally developed risk identification aids used, such as the SEI "Taxonomy Based Questionnaire?"		X		The SID revised risk policy requires use of the SEI Taxonomy questions as a starting point for risk identification.

### 5.2.4 Communications

Project Management Capability Assessment: High Criticality Projects

Activity	All	Some	None	Comment
<b>Communication</b>				
Is there a written project communications plan?		X		
Are regular written status reports prepared and provided to the project manager, department CIO (if applicable) and other key stakeholders?	X			Monthly reports are provided to the PM, CIO, project sponsor, Agency and where appropriate, Federal stakeholders.
Are there written escalation policies for issues and risks?		X		Not consistently documented
Is there regular stakeholder involvement in major project decisions, issue resolution and risk mitigation?		X		Sponsor and stakeholder participation is requested on a regular basis.

### 5.2.5 System Engineering

Project Management Capability Assessment: High Criticality Projects

Activity	All	Some	None	Comment
<b>System Engineering</b>				
Are users involved throughout the project, especially in requirements specification and testing?		X		User participation is encouraged, but not always received due to conflicting schedules and priorities.
Do users formally approve/sign-off on written specifications?		X		Formal signoff is not always obtained. In some cases users are not willing to provide a signature.
Is a formal system development life-cycle (SDLC) methodology followed?	X			The SID Life Cycle Processes as documented on the SID best practices website.
Is a software product used to assist in managing requirements? Is there tracking of requirements traceability through all life-cycle phases?		X		Requirements traceability is not always complete, particularly in the case of COTS. Projects do not always have visibility into code and initial testing.
Are software engineering standards adhered to?	X			
Does software defect tracking begin no later than requirements specifications?		X		Projects begin defect tracking at code level. Problems during design phase are handled through document review process. Defect tracking is often delegated to the contractor.
Are there formal code reviews?		X		Not all projects have visibility into the code, particularly in the case of COTS.
Are formal quality assurance procedures followed consistently through all life-cycle phases?		X		Level of QA varies due to availability of resources. QA is most consistent during design, code and test.
Do users sign-off on acceptance test results before a new system is put into production?		X		Signoff is not always formal, but at least verbal acceptance is always required

Activity	All	Some	None	Comment
Is the enterprise architecture plan adhered to?			X	True enterprise planning (across projects and in conjunction with CDSS as the sponsor) does not occur.
Are formal deliverable inspections performed, beginning with requirements specifications?	X			
Are IV&V services used?		X		Funding for IV&V has not always been received. In these cases, QA attempts to perform some of the typical IV&V functions.

### 5.2.6 Project Management Practices and Processes

The rating for the division is 100 (Medium). This score will be used in the conjunction with the IT Management Structure and Environment Assessment score in the next section.

Questionnaire Completed	Assign a ranking of High for	Assign a ranking of Medium for	Assign a ranking of Low for
High criticality projects	Greater than 121	88-121	Less than 88
Medium criticality projects	Greater than 91	66-91	Less than 66
Low criticality projects	Greater than 53	39-53	Less than 39

### 5.3 Project Management Capabilities

The IT Management Structure and Environment Assessment Criteria consists of 6 components:

- Executive level visibility and control of the IT function
- Centralization of PM support and related functions
- Training and Certification of Project Managers
- Use of a Formal Project Management Methodology
- Use of a Formal System Development Methodology
- Enterprise Architecture Strategy

### 5.3.1 IT Management Structure and Environment

Executive level visibility and control of the IT function	
The Department has a position responsible for all Department IT projects (e.g. CIO) that reports to the Director or a Deputy Director.	High X
The individual responsible for all Department IT projects has either (1) responsibility for non-IT as well as IT functions or (2) does not report to the Director or a Deputy Director.	Medium
There is no single individual responsible for all Department IT projects.	Low

SID Rating and Rationale: The HHSDC Systems Integration Division's Assistant Director oversees and is responsible for all of the SID projects. This position reports directly to the HHSDC Director. This item is rated as High.

### 5.3.2 Centralization of PM Support

Centralization of PM support and related functions	
The Department has a unit that is independent of any individual project that provides project management office (PMO) type support for all department projects and project managers.	High
The Department has specialists in IT planning, budgeting, tracking and control agency reporting, but does not possess an IT PMO-type organization; or the department's PMO-type organization does not support all department projects.	Medium X
The Department possesses neither of the above.	Low

SID Rating and Rationale: SID has a Best Practices Support Group (BPSG) that provides many of the functions of a PMO but does not provide centralized project reporting, tracking, budgeting or planning. This item is considered Medium.

### 5.3.3 Training and Certification of Project Managers

Training and Certification of Project Managers	
The Department formally supports/ sponsors formal training for IT project managers and staff participate in training and, as appropriate, have become formally certified.	High
While there is no formal Department support/sponsorship for formal training for IT project managers, Department staff participate in formal training and, as appropriate, have become formally	Medium X

Training and Certification of Project Managers	
certified.	
Department staff do not participate in formal project management training/certification programs.	Low

SID Rating and Rationale: SID managers and staff are encouraged to attend the formal training necessary and required to perform their jobs. Project management certification is encouraged but not mandatory and some of the SID project managers have received their certification. This item is Medium.

### 5.3.4 Project Management Methodology

Use of a Formal Project Management Methodology	
The Department uses (and/or requires contractors to use) a single formal methodology for project management functions on all projects.	High X
The Department (and/or requires contractors to use) adheres to specific formal standards for project management functions on projects or uses multiple formal methodologies.	Medium
The Department does not always use, nor does it require contractors to always use, a formal project management methodology.	Low

SID Rating and Rationale: SID projects currently adhere to the PMI PMBOK guidance This item is High.

### 5.3.5 System Management Methodology

Use of a Formal System Development Methodology	
The Department uses (and/or requires contractors to use) a single formal system development life cycle methodology on all IT projects.	High
The Department uses (and/or requires contractors to use) multiple formal system development methodologies with each project adhering to one.	Medium X
The Department does not always use, nor does it require contractors to always use, a formal system development life cycle methodology.	Low

SID Rating and Rationale: SID projects currently use multiple formal system development methodologies. On fixed price contracts, contractors are allowed to use their own methodology if they provided required tracking and oversight data to SID. This item is Medium.

### 5.3.6 Enterprise Architecture Strategy

Enterprise Architecture Strategy	
The Department has a comprehensive enterprise hardware/software architecture strategy and uses the strategy to guide project level architecture decisions.	High
The Department lacks a comprehensive enterprise architecture strategy, but technical architecture standards and guidelines are generally understood and followed on individual projects.	Medium
The Department lacks any enterprise architecture strategy, or generally does not follow any enterprise hardware/software standards.	Low X

SID Rating and Rationale: The SID projects do not follow any consolidated, formal enterprise architecture strategy. This item is Low.

### 5.3.7 Computation of the IT Management Structure and Environment Score

(a) Factor		(b) Rating
1	Executive Level Visibility and Control	3
2	Centralization of PM Support	2
3	Training and Certification of Project Managers	2
4	Project Management Methodology	3
5	System Management Methodology	2
6	Enterprise Architecture Strategy	1
Total		13

Possible Results	Recommended Project Rating
2.51 – 3.0	High
1.71 – 2.5	Medium
1.0 – 1.7	Low

SID Rating and Rationale: The overall rating is 2.17 or Medium.



---

## 5.4 Risk Management and Escalation Procedures

SID projects currently have in practice the risk management requirements described in the DOF IT Project Oversight Framework document except for the new escalation requirements and having resources identified in project budgets for risk mitigation work plans for high risks. A new SID Risk Management Policy incorporates the escalation and reporting requirements identified in the Oversight Framework, and is currently being implemented by the projects.

Refer to Appendix C for the SID Policy for Risk Management.

## 5.5 Independent Oversight Requirements

The SID projects currently are subjected to multiple levels of project oversight including federal oversight in most cases. The DOF Framework will require some changes to existing reports and some additional work for Quality Assurance and Independent Validation and Verification consultants. The Framework requires an additional level of oversight for highly critical projects, which the majority of SID projects will be classified as, and additional funding for this will need to be addressed.

The following paragraphs describe SID's current approach to oversight and monitoring of project and contractor performance.

### SAWS Project Management

The SAWS project is responsible for ensuring that the four consortia projects deliver automated systems that meet State requirements and adhere to SID best practices. The HHSDC has developed a tailored approach to consortia oversight based upon a small set of broad objectives. These broad objectives represent key outcomes or capabilities desired by the State. They are:

- Early warning of deviations from plan (in terms of both resources and schedule), consortium plans for remediation, and the capability to make credible independent estimates of time and cost to completion when deviations occur;
- A better quality product (i.e., fewer defects; higher rate of defect discovery in early stages; high user satisfaction);
- Increased control of software change order impact and cost; and
- More effective mitigation of technical architecture risk.

For each objective, a set of practical issues or questions about the project has been identified for monitoring. The oversight program consists of identifying, collecting, and evaluating the information required to answer these questions (performance monitoring), and using the results to identify and help mitigate project risks (risk management).

### Project Quality Assurance

Where funding has permitted, the SID projects use QA staff to help evaluate contractor work products and processes, assist with or verify requirements traceability, assist with risk tracking and mitigation and status reporting, and assist with project process implementation and improvement. QA staff report directly to the Project Manager (or Assistant Project Manager).

### Sponsor Department Oversight

The California Department of Social Services, the project sponsor for the SID projects, provides independent oversight via consultants. The Independent Validation and Verification (IV&V) consultant periodically reviews and assesses project progress against the plan. Assessment Reports are provided by the IV&V consultant to the project sponsor. Current funding permits IV&V on only a few projects (part-time oversight on four projects).

### Agency Oversight

The Agency has initiated a Project Oversight Board (POB) made up of the Agency's Chief Information Officers (CIO) and led by the Agency Information Officer (AIO). Monthly project reports that include status, risks and issues are reviewed at the monthly POB meeting.

### DOF

The Department of Finance will provide oversight for all projects assigned a high level of criticality/risk.

### Federal Oversight

SID projects that receive federal funding or are federally mandated may be required to send periodic reports to the federal stakeholder and are always subject to random federal audits and reviews.

## 6. SUMMARY OF GAPS

This section summarizes the gaps identified in Section 5. There were 10 themes that were found in the analysis, as presented in Table 2. Of these themes, two are beyond the control of SID. The remaining gaps are either currently being worked or are planned for review and action. Section 7 discusses some of the initiatives currently in work to address the gaps.

**Table 2. Summary of Gaps**

THEME	STATUS
Staff Training and Experience	In Work
Work Planning at the Task Level	Planned for Review
Cost and System Size Estimates	Planned for Review
Documented Plans	In Work
Issue Tracking	In Work
Enterprise Architecture	Planned for Review
Risk Management	In Work
User/Sponsor Participation	No Control
Requirements/Code/Defects	Planned for Review
QA, IV&V and PMO Support	No Control

The following sections describe each of the specific gaps that were found in the various classification and category areas.

### 6.1 Project Classification Gaps

The overall rating for this area was Medium.

#### 6.1.1 Project Manager and Staff Experience

These areas were rated as Low and Medium, respectively, because not all SID state staff have completed two or more projects of a similar size and complexity in their current position or role. This is partially attributable to SID's culture and approach to staff development. SID does not feel this is a significant risk because mentoring and informal training does occur.

#### 6.1.2 Project Type

This area was rated as high due to the use of custom software and data center operations. Because SID's projects involve users statewide with varied business practices, this is not likely to change. SID does not have control over this item.

### 6.2 Project Management Requirements Gaps

The overall rating for this area was Medium.

---

### **6.2.1 Work Planning and Tracking at the Task Level**

It has not always been possible to perform work planning and tracking at the detailed task level due to the fixed-price nature of many of the SID contracts. In some cases, the contractor has been unwilling (or unable) to provide such information for tracking purposes. SID will continue to advocate for this information on new contracts, but the data is not always available from existing contracts.

In addition, tracking of state costs and hours is difficult due to the current state processes for reporting time and costs. Obtaining this data would require duplicative reporting and tracking at the project and departmental level. At this time, SID does not feel this is a high priority, but the topic will be discussed in upcoming SID Quality Assurance Working Group (QAWG) meetings (discussed more in Section 7).

### **6.2.2 Cost and Software Size Estimates and Tracking**

Again, due to the fixed-price nature of most SID contracts, true planned and actual costs are not always available. Contractors are reluctant to disclose actual profit margins and true costs for doing business. This is unlikely to change, if the State continues to use fixed-price contracts. Cost data is tracked for time and materials contracts and supporting data is maintained.

For those projects using modified COTS, software size estimates are also not available. For custom software, SID has a pilot study in progress on the SAWS project which attempts to gather software size metrics for use in evaluating change requests/change orders. The results and lessons learned from this study will be discussed for applicability to all SID projects.

Independent reviews of costs and sizes (by an outside experienced consultant) are not always performed due to funding constraints. However, at a minimum cost estimates are reviewed by department and control agency stakeholders for reasonableness in addition to project reviews.

### **6.2.3 Documented Plans**

#### Staff Management and Training Plans

At this time, SID does not have formally Staff Management and Staff Training Plans. These items will be discussed in upcoming QAWG meetings. The expected outputs from the QAWG include outlines and content standards for both Staff Management and Staff Training Plans.

#### Configuration Management Plans

SID has been implementing a document management system (iManage) to assist projects with configuration control of project documentation and deliverable documents. Not all projects have configuration management plans that cover project office configurations. The contractor is usually responsible for configuration control of the code/system, until the system is transition to another maintenance organization. Change control is exercised for system changes.

#### Communications Plan

Most of the projects have documented Communications Plans. The few that do not are working on it as time permits.

---

## Escalation Policies

Some of the projects have documented escalation policies for issues, risks and contract problems. In most cases, this information is documented in the project's prime contract. For projects in the planning and procurement phases, this information is not always formally documented. For new SID projects, this information is required in the project's Governance Plan at a minimum. An outline for the Governance Plan is available from SID's best practices web site.

### **6.2.4 Issue Tracking**

Due dates for issue tracking have not always been enforced. SID has been piloting and evaluating various issue tracking tools that will assist with tracking due dates and automated escalation of late issues. Often issues involve external organizations over which SID has no control.

### **6.2.5 Enterprise Architecture Planning**

Currently the SID projects do not do enterprise planning across projects. To correctly perform enterprise planning, SID would need to work with the HHSDC Operations divisions, various CDSS program divisions and county infrastructure representatives. At this time, there is no funding for such a study. SID currently has a technical architecture study in progress on the CWS/CMS project. Results and lessons learned from the study will be discussed among the projects.

### **6.2.6 Risk Management**

SID has just completed a revision to their risk policies and standards to incorporate the TOSU Framework guidelines. The projects are in the process of reviewing and implementing the changes.

### **6.2.7 Formal User/Sponsor Participation and Sign-Off Procedures**

SID encourages, but does not currently require, participation and formal signoffs from its users or sponsor. In some cases, the sponsor has felt this is a project responsibility and not a sponsor responsibility. The sponsor has participated in Go/No-Go and acceptance decisions and meetings, but does not always sign the resulting paperwork. SID will continue to advocate for formal signoffs.

User participation is often hampered by distance and the need to travel. Budgetary constraints have led to the use of conference calls where possible. Often users are unable to participate due to workload and other priorities. Staff turnover has been another issue. SID will continue to advocate for user participation and work to ensure they are kept informed and involved in the project.

### **6.2.8 Requirements Traceability, Code Reviews and Defect Tracking**

Because SID does not always have visibility into the contractor's code (due to fixed price contracts and COTS), requirements traceability has not always been complete. Often SID relies on the QA or IV&V staff to perform or validate the traceability given the available work products and information. SID is emphasizing the need for requirements traceability and will be investigating the possibility of a standardized requirements management tool in the beginning of next year (2004).

When the SID projects have visibility into contractor code, code reviews have been conducted. However the project does not always have this visibility.

Defect tracking (i.e., identifying problems in work products and addressing the correction) is handled in two manners. For deliverable documents, defects are handled and tracked through the deliverable review and approval process. For code and hardware, defect tracking does not begin until the code has been developed. Tracking of defects is often delegated to the contractor with the project requiring regular reports, and sometimes, direct access to the defect tracking tool. SID does not believe this is a significant risk.

#### **6.2.9 QA and IV&V**

SID projects continue to request funding for QA and IV&V, but are not always successful in obtaining funding for both these functions. This is outside of SID's control.

### **6.3 Project Management Capability Gaps**

The overall rating for this area was Medium.

#### **6.3.1 Centralized PM Support**

At this time, there is no funding and no positions available for a fully functional PMO. SID's Best Practices Support Group (BPSG) is focused on process improvement and assisting with adherence to industry standards for project management and systems acquisitions. SID will be conducting a work group to discuss consolidation of reporting of certain items (risks, issues) in the latter part of 2003. However, budgeting and control agency reporting will likely remain distributed to the projects.

#### **6.3.2 Training and Certification of Project Managers**

SID advocates for training and certification, but does not require or budget for certification training and fees. This item will be discussed as part of a QAWG in mid-2003.

#### **6.3.3 System Management Methodology**

SID allows its prime contractors to propose and use their own proprietary systems methodology, as long as it is compliant with to PMI and IEEE standards and guidelines. SID does not feel this is a significant risk.

#### **6.3.4 Enterprise Architecture Strategy**

Refer to Section 6.2.3.

## 7. INITIATIVES TO ADDRESS GAPS

SID already has some initiatives planned for review. Priorities may be adjusted as necessary depending on discussions with TOSU regarding criticality and concerns.

### 7.1 SID Quality Assurance Working Group (QAWG)

The SID QAWG is comprised of the project QA representatives from all the SID projects. Part of their task is to identify or leverage work in the individual projects which can be of benefit to all projects in the division. The following is the current schedule of topics for the QAWG.

**Table 3. QAWG Schedule**

TOPIC	TIMEFRAME	NOTES
Staff Training Standards	Mar-Apr 2003	SID's approach to training emphasis on project skills and knowledge
Project Performance Metrics	May-Jun 2003	Metrics and methods to track project office performance, including costs, hours
Contract Performance Metrics	Jul-Aug 2003	Metrics and methods to track contractor performance, including costs, hours
Work Planning	Sep-Oct 2003	Staff resource management and hour/cost tracking, and task tracking

### 7.2 Project Office Support Tools (POST)

SID has an internal effort in work, which researches available tools to assist with project management tracking of key data. The initiative surveys the projects to determine the tools they are currently using (and any others they tried or evaluated), establishes the requirements for tool functionality and maintainability, and then selects a tool to pilot and/or makes the selected tool available for the other projects. Issue tracking and risk tracking tools are currently being reviewed and selected for piloting. Tool requirements have been developed and are under review.

Another of the topics to be reviewed is requirements management and traceability. The initial tool requirements have been established and a pilot evaluation is anticipated to begin Jan-Mar 2004, depending on resource availability.

## **8. CONCLUSIONS**

SID has already positioned itself to address the gaps between its current practices and the TOSU IT Oversight Framework. Some of the initiatives are already underway and others are planned for later in the year. There are no major gaps which are under SID's control. While SID projects are at varying levels of compliance, they are all working to address the issues. The QAWG helps to share information and practices between projects that are and are not compliant to leverage work that has already been done.

A number of questions remain regarding application of the framework criteria and there are several items which need clarification to ensure that the criteria have been interpreted correctly. These items have been included in Appendix D and include the citation in the framework to provide context.



## **APPENDICES**

## Appendix A - ACRONYMS & ABBREVIATIONS

AIO	Agency Information Officer
APD	Advance Planning Document
BL	Budget Letter
BPSG	Best Practices Support Group
Cannery	Refers to the HHSDC Alhambra office site
CDSS	California Department of Social Services
CIO	Chief Information Officer
C-IV	Consortium IV
CMIPS	Case Management Information and Payrolling System
CMSP	County Medi-Cal Services Program
COTS	Commercial Off The Shelf
CWS/CMS	Child Welfare Services/Case Management System
DED	Deliverable Expectation Document
DGS	Department of General Services
DOF	Department of Finance
EBT	Electronic Benefit Transfer
HHSDC	Health and Human Services Data Center
IDP	Individual Development Plan
IEEE	Institute of Electrical and Electronic Engineers
IHSS	In-Home Supportive Services
IPOC	Independent Project Oversight Consultant
ISAWS	Interim Statewide Automated Welfare System
IT	Information Technology
IV&V	Independent Verification and Validation
LEADER	Los Angeles Eligibility Automated Determination, Evaluation and Reporting system
M&O	Maintenance and Operations
PM	Project Management
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
PMO	Project Management Office
POB	Project Oversight Board
POST	Project Office Support Tools
QA	Quality Assurance
QAWG	Quality Assurance Working Group
SAWS	Statewide Automated Welfare System
SEI	Software Engineering Institute
SFIS	Statewide Fingerprint Imaging System
SID	Systems Integration Division
TANF	Temporary Assistance for Needy Families
TOSU	Technology Oversight and Security Unit
WCDS	Welfare Client Data System
WDTIP	Welfare Data Tracking Implementation Project

## Appendix B - SID LIFE CYCLE AND PROJECT PHASES

### SID Project Lifecycle Description

The SID projects have defined a standard project lifecycle that all of the acquisition projects have either gone through or will go through. The standard lifecycle consists of seven primary processes. The processes are:

- Initiation
- Planning
- Procurement
- System Development
- System Implementation
- Maintenance & Operations
- Closeout

Each SID project progresses through the lifecycle phases. There is some overlap work done between the processes but significant milestones within each phase, assist in defining the beginning and ending points of each phase. At any given point in time, each SID project is operating within different phases within the lifecycle.

The following figure depicts the SID System Lifecycle.

### System Life Cycle Variations

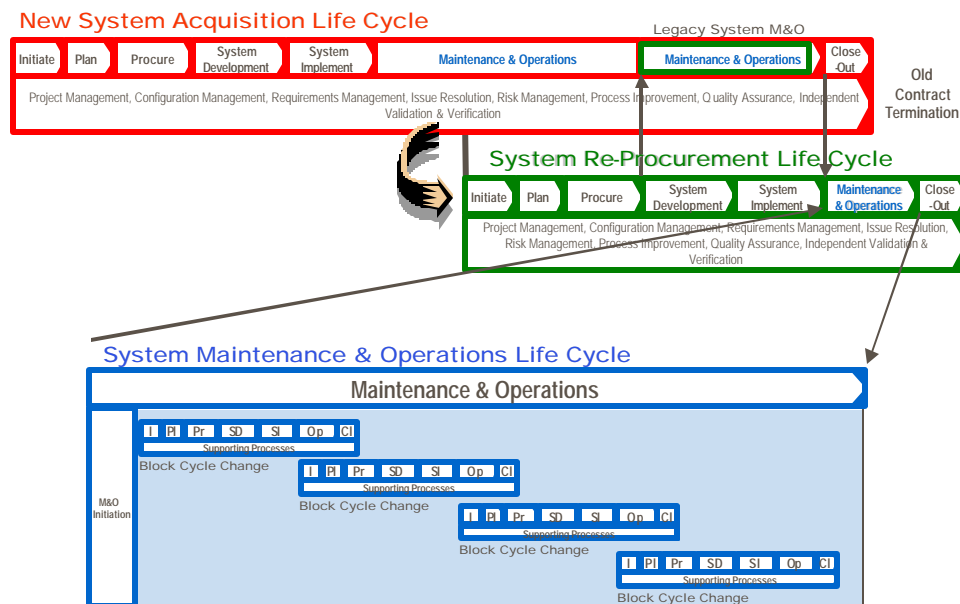


Figure 3. SID Projects Life Cycle

## Appendix C - SID POLICY FOR RISK MANAGEMENT

### ● ADOPTION OF SID POLICY

As part of SID's ongoing commitment to process improvement and quality within the division, I am pleased to announce the adoption of the SID Policy on Risk Management. This policy will help to clarify and enhance our current practices, and continue to align our organization with the Software Engineering Institute's Capability Maturity Model (SEI's CMM).

---

Steve Howe

---

Date

Assistant Director, Systems Integration Division

### ● Applicability

This policy applies to all SID projects that are beginning a new SID Project Life Cycle phase after the effective date of this policy. Projects that are in the middle of an SID life cycle process (at the effective date of this policy) are required to demonstrate due diligence in complying with this policy to the degree that it does not jeopardize their ability to satisfy prior project commitments. The SID Assistant Director will consider special situations for non-compliance on a case-by-case basis.

### ● Policy Statement

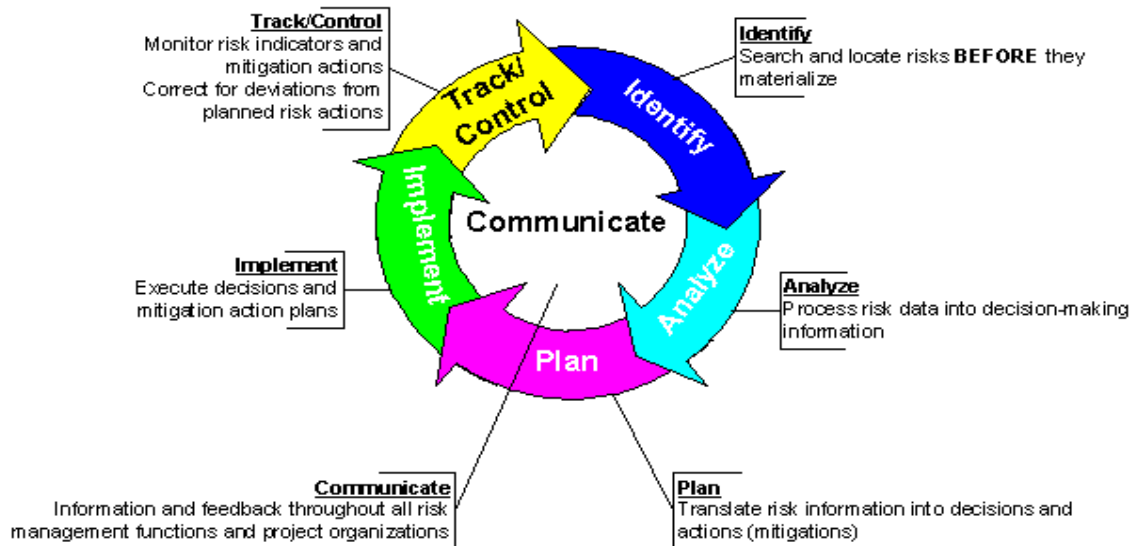
The Systems Integration Division (SID) is implementing this policy in compliance with the Department Of Finance (DOF) Information Technology Project Oversight Framework (Budget Letter 03-04, dated Feb 7, 2003) as it relates to risk management for IT projects. SID projects will adopt (and tailor as needed) the Software Engineering Institute's (SEI's) Risk Management Paradigm as the preferred source of guidance for successfully implementing risk management. Applicable projects in SID must demonstrate compliance to the risk management standards and SID CMM policies outlined on the Best Practices web site.

### ● Reference Documents

- Department of Finance (DOF) Information Technology Project Oversight Framework, Budget Letter 03-04, dated Feb 7, 2003, DOF.
- Software Acquisition - Capability Maturity Model (SA-CMM), Key Process Area 3.4 - Acquisition Risk Mgmt, SEI.
- Taxonomy -Based Risk Identification, SEI.
- Software Risk Evaluation (SRE) Method Description, SEI.
- Continuous Risk Management Guidebook (Dorofee, 1996).
- SID CMM policies, Best Practices web site (<http://bpweb> and <http://www.bestpractices.cahwnet.gov>), SID.
- SID Standards for Risk Management, Best Practices web site (<http://bpweb> and <http://www.bestpractices.cahwnet.gov>), SID.

## ● RISK MANAGEMENT PROCESS

Projects will adopt the following SEI Risk Paradigm that includes six process areas for risk management as shown in the diagram below.



### Step 1-Identify

The objective of Step 1 – Identify is to search and find risks before they become problems using risk identification. Risk identification involves a process where issues and concerns about a project are transformed into tangible risks.

### Step 2 – Analyze

The objective of Step 2 – Analyze is to transform risk items into information that can be used to aid decision-making and to validate the risk information, using risk analysis. Risk analysis involves classification and prioritization of risk items, providing recommendations for mitigating and measuring risk items, and reviewing risk item information.

### Step 3 – Plan

The objective of Step 3 – Plan is to take ownership of risk mitigation. Risk planning involves assigning risk ownership, developing risk mitigations, developing measurements, reviewing and approving risk mitigations and measurements, translating mitigations into action plans, and recording risk information changes in the Project Risk Database (PRD).

### Step 4 – Implement

The objective of Step 4 – Implement is to actively mitigate risks. Risk implementation involves the execution of risk mitigation action plans and recording risk information changes in the Project Risk Database (PRD).

### Step 5 – Track/Control

The objective of Step 5 – Track/Control is to insure that all steps of the Risk Management process are being followed and, as a result, risks are being mitigated. Risk tracking/control involves the oversight and tracking of risk mitigation action plan execution, re-assessment of risks, reporting risk status, and recording risk information changes in the Project Risk Database (PRD).

### Communication

Communication enables the sharing of all information throughout the project and is the cornerstone of effective risk management. This is an on-going activity that takes as part of each of the steps mentioned above.

## ● Risk Classifications

Projects will use the SEI's Taxonomy-Based Risk Identification schema (with associated questions) as a best practices tool for identifying potential project risks. Risk classifications will then be identified based on the summary of results collected by performing the SEI taxonomy exercise. The SEI Taxonomy Structure is shown below.

- |  |   |   |
|--|---|---|
| <p>A. Product Engineering</p> <ol style="list-style-type: none"> <li>1. Requirements               <ol style="list-style-type: none"> <li>a. Stability</li> <li>b. Completeness</li> <li>c. Clarity</li> <li>d. Validity</li> <li>e. Feasibility</li> <li>f. Precedent</li> <li>g. Scale</li> </ol> </li> <li>2. Design               <ol style="list-style-type: none"> <li>a. Functionality</li> <li>b. Difficulty</li> <li>c. Interfaces</li> <li>d. Performance</li> <li>e. Testability</li> <li>f. Hardware Constraints</li> <li>g. Non-Developmental Software</li> </ol> </li> <li>3. Code and Unit Test               <ol style="list-style-type: none"> <li>a. Feasibility</li> <li>b. Testing</li> <li>c. Coding/Implementation</li> </ol> </li> <li>4. Integration and Test               <ol style="list-style-type: none"> <li>a. Environment</li> <li>b. Product</li> <li>c. System</li> </ol> </li> <li>5. Engineering Specialties               <ol style="list-style-type: none"> <li>a. Maintainability</li> <li>b. Reliability</li> <li>c. Safety</li> <li>d. Security</li> <li>e. Human Factors</li> <li>f. Specifications</li> </ol> </li> </ol> | <p>B. Development Environment</p> <ol style="list-style-type: none"> <li>1. Development Process               <ol style="list-style-type: none"> <li>a. Formality</li> <li>b. Suitability</li> <li>c. Process Control</li> <li>d. Familiarity</li> <li>e. Product Control</li> </ol> </li> <li>2. Development System               <ol style="list-style-type: none"> <li>a. Capacity</li> <li>b. Suitability</li> <li>c. Usability</li> <li>d. Familiarity</li> <li>e. Reliability</li> <li>f. System Support</li> <li>g. Deliverability</li> </ol> </li> <li>3. Management Process               <ol style="list-style-type: none"> <li>a. Planning</li> <li>b. Project Organization</li> <li>c. Management Experience</li> <li>d. Program Interfaces</li> </ol> </li> <li>4. Management Methods               <ol style="list-style-type: none"> <li>a. Monitoring</li> <li>b. Personnel Management</li> <li>c. Quality Assurance</li> <li>d. Configuration Management</li> </ol> </li> <li>5. Work Environment               <ol style="list-style-type: none"> <li>a. Quality Attitude</li> <li>b. Cooperation</li> <li>c. Communication</li> <li>d. Morale</li> </ol> </li> </ol> | <p>C. Program Constraints</p> <ol style="list-style-type: none"> <li>1. Resources               <ol style="list-style-type: none"> <li>a. Schedule</li> <li>b. Staff</li> <li>c. Budget</li> <li>d. Facilities</li> </ol> </li> <li>2. Contract               <ol style="list-style-type: none"> <li>a. Type of Contract</li> <li>b. Restrictions</li> <li>c. Dependencies</li> </ol> </li> <li>3. Program Interfaces               <ol style="list-style-type: none"> <li>a. Customer</li> <li>b. Associate Contractors</li> <li>c. Subcontractors</li> <li>d. Prime Contractor</li> <li>e. Corporate Management</li> <li>f. Vendors</li> <li>g. Politics</li> </ol> </li> </ol> |
|--|---|---|

## Impact

Projects will adopt the following rating when assigning impacts to identified risks.

**High-** The risk represents a significant negative impact on project budget, schedule, or quality

**Medium-** The material impacts would significantly affect users, clients, or other key stakeholders

**Low-** The risk does not represent a significant or material impact on project budget, schedule or quality

IMPACT	CRITERIA
High	<p>Risk consequences include one or more of the following:</p> <ul style="list-style-type: none"> <li>Significant schedule delay. For example, delay in a critical path activity by more than 2 months.</li> <li>Significant cost increase. For example, project budget increase by more than 20%.</li> <li>Significant technical change. For example, system performance decreases by more than 50%.</li> <li>Significant resource change. For example, loss of more than 20% of personnel, or loss of more than 10% of key management personnel.</li> <li>Significant political repercussions. For example, non-compliance with current legislation which involves significant penalties.</li> <li>Significant user dissatisfaction. For example, more than 20% of users are extremely dissatisfied with more than 20% of system functions or performance characteristics.</li> <li>Significant client dissatisfaction. For example, failure to disburse payments within required timeframes for a substantial number of clients.</li> </ul>

IMPACT	CRITERIA
Medium	<p>Risk consequences include one or more of the following, but do not include any consequences identified above under "High":</p> <ul style="list-style-type: none"> <li>Moderate schedule delay. For example, delay in a critical path activity by 2-8 weeks, or delay in a non-critical path activity by more than 1 month.</li> <li>Moderate cost increase. For example, project budget increase by 10-20%.</li> <li>Moderate technical change. For example, system performance decreases by 20-50%.</li> <li>Moderate resource change. For example, loss of 10-20% of personnel, or loss of 5-10% of key management personnel.</li> <li>Moderate political repercussions. For example, moderate dissatisfaction of political parties or special interest groups.</li> <li>Moderate user dissatisfaction. For example, 10-20% of users are extremely dissatisfied with 10-20% of system functions or performance characteristics, or more than 20% of users are moderately dissatisfied with more than 20% of system functions or performance characteristics.</li> <li>Moderate client dissatisfaction. For example, payments to custodial parents are inaccurate.</li> </ul>

IMPACT	CRITERIA
Low	<p>Risk consequences include one or more of the following, but do not include any consequences identified above under "High" or "Medium":</p> <ul style="list-style-type: none"> <li>Minor schedule delay. For example, delay in a critical path activity by less than 2 weeks, or delay in a non-critical path activity by less than 1 month.</li> <li>Minor cost increase. For example, project budget increase by less than 10%.</li> <li>Minor technical change. For example, system performance decreases by less than 20%.</li> <li>Minor resource change. For example, loss of less than 10% of personnel, or loss of less than 5% of key management personnel.</li> <li>Minor political repercussions. For example, minor dissatisfaction of political parties or special interest groups.</li> <li>Minor user dissatisfaction. For example, less than 20% of users are extremely dissatisfied with less than 20% of system functions or performance characteristics.</li> <li>Minor client dissatisfaction. For example, overpayments to custodial parents.</li> </ul>

## ●Probability

Projects will adopt the following rating when assigning probability to identified risks.

**High**-The risks are almost certain or very likely to occur

**Medium**-The risks that may occur or have a 30-90%<sup>2</sup> chance of occurring

**Low**-The risks are unlikely to occur or will probably not occur

PROBABILITY	CRITERIA
High	It is very likely that the risk will occur. There is approximately a 90% or higher confidence level <sup>1</sup> that the risk will occur.
Medium	It is somewhat probable that the risk will occur. There is approximately a 30-90% confidence level that the risk will occur.
Low	It is very unlikely or improbable that the risk will occur. There is approximately a less than 30% confidence level that the risk will occur.

<sup>1)</sup> The term “confidence level” is not a statistically based determination, but rather is based on expert judgment.

[2] Department Of Finance, Information Technology Project Oversight Framework, Section 5 - Risk Mgmt and Escalation Procedures identifies Medium probability as 50-50. SID feels this not as useful a measure and has opted to use a range from 30-90%.

## ●Timeframe

Projects will define the timeframes that they feel risks could materialize according to the following ratings.

**Near-Term** – The risk is most likely to occur in less than 6 months

**Mid-Term** –The risk is most likely to materialize in between 6 months to 1 year from now

**Far-Term** –The risk is most likely to materialize in a period of greater than 1 year

## ●Risk Exposure

Impact	Probability			
		High	Medium	Low
	High	High	High	Medium
	Medium	High	Medium	Low
	Low	Medium	Low	Low

Projects will create a risk exposure matrix from the risk attributes of impact and probability. Projects will assign the following risk exposure ratings as shown in the matrix below. Projects not tracking timeframes will use this chart to establish risk priority.

Reference: Department Of Finance, Information Technology Project Oversight Framework, Section 5 - Risk Mgmt and Escalation Procedures.

## ●Risk Severity (Priority)

Projects will define risk severity as a function of Risk Exposure and Timeframe for determining the relative PRIORITY of the identified risks. Projects will create and assign the following risk severity ratings as shown in the matrix below.

Time Frame	Exposure			
		High	Medium	Low
	Near-Term	High	High	Medium
	Mid-Term	High	Medium	Low
	Far-Term	Medium	Low	Low

Reference: Department Of Finance, Information Technology Project Oversight Framework, Section 5 - Risk Mgmt and Escalation Procedures. Note: DOF uses the terms short, medium, and long to describe the timeframe. SID has opted to use the terms as defined above.



## ●Risk Escalation

Projects will define risk escalation as a function of Project Criticality (See DOF's IT Project Oversight Framework, Section 2) and Risk Severity (see above) as a means for determining which risks will be escalated from department to Agency, and from Agency to Finance. Not all risks require escalation and escalation of project risks will not necessarily result in a change in project criticality.

<b>Sample Only</b>		<b>Risk Severity</b>		
		High	Medium	Low
<b>Project Criticality</b>	High	To Finance	To Agency	Department (No escalation)
	Medium	To Agency	To Agency	Department (No escalation)
	Low	Medium	Department (No escalation)	

Note: Projects are free to create a project-specific matrix and are not required to adhere to the SAMPLE shown below. Projects are to define "how" risks are escalated and through what chain of command they are submitted (until they reach their eventual reporting destination).

Reference: Department Of Finance, Information Technology Project Oversight Framework, Section 2 - Project Classification & Section 5 - Risk Mgmt and Escalation Procedures.

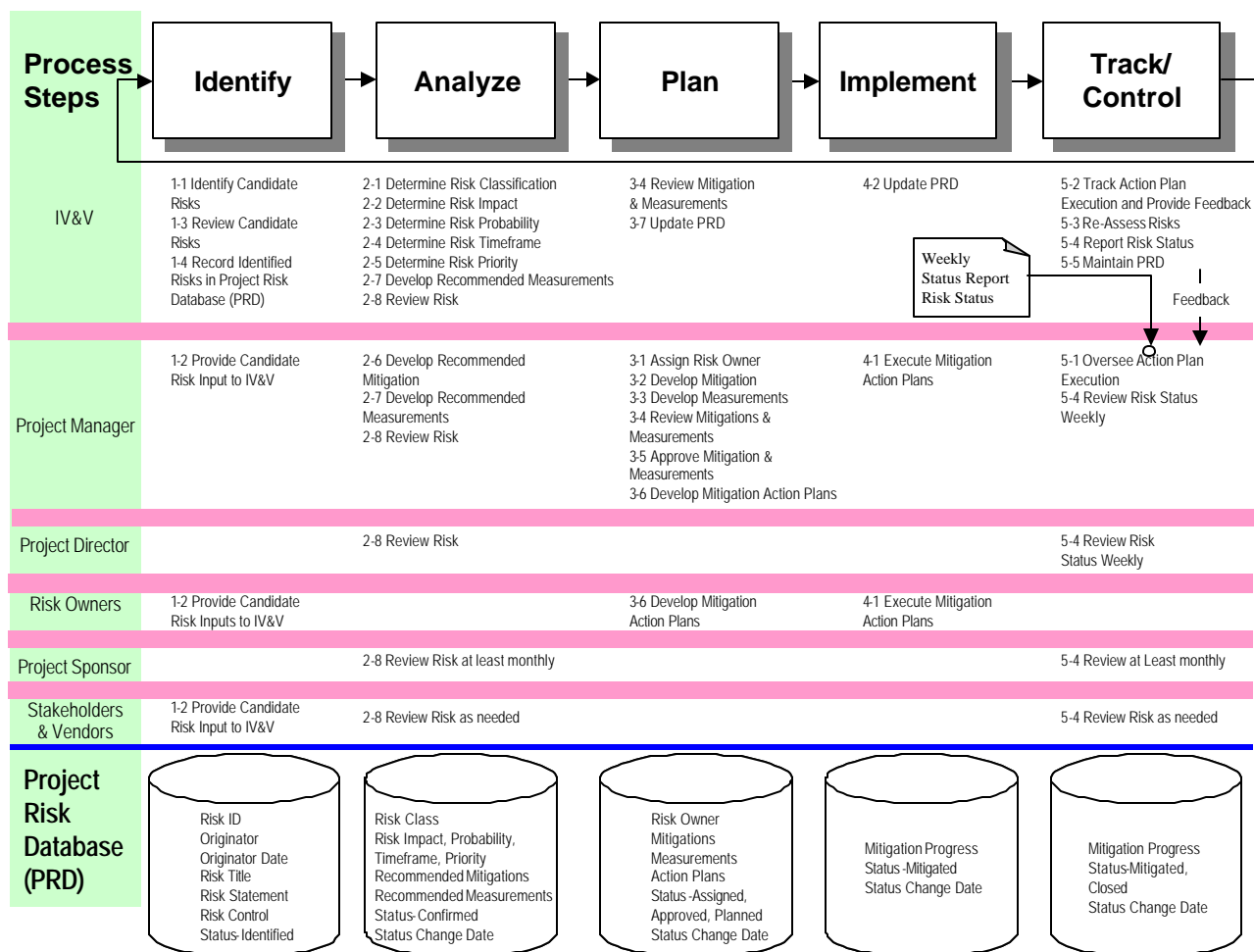
## ●Control

Projects may include Level of Control as a category with the four choices as shown below. It will be important that an integrated risk management system be able to distinguish the level by which risks need to be addressed (e.g., SID-Level, HHSDC Director-Level, PM-Level, etc.). This category could be specifically used to indicate who has the authority to influence the risk.

<b>Level of Control</b>	<b>Definition</b>
No Control	No resource within SID or HHSDC can control the outcome of this risk
Minimal	The SID Assistant Director or HHSDC Director has the authority to control the outcome of this risk
Moderate	The Project Manager has the authority to control the outcome of this risk
High	A Project Team Leader has the authority to control the outcome of this risk

## ● Risk Management Tools

The following diagram (MS PowerPoint) illustrates how the Risk Management Paradigm facilitates project team involvement as well as provides inputs to a toolset that supports the risk management processes.



## ● Lessons Learned Repository on Risk

Projects are encouraged to include a review of historical findings of prior projects (as taken from the PRD) and use these findings during the acquisition planning process or start of new life cycle phase. Confidentiality of items in the risk database will need to be taken into account before releasing risk information across projects.

## ● Public Domain Nature of Risk

Some projects have "confidential" risks that could have legal ramifications if inadvertently released. The notion of "public" risks needs to be considered when deciding to offer risks for the purpose of lessons learned. Projects are to coordinate release of potentially sensitive information with their legal advisors before submitting items to the public.

## **Appendix D - AREAS OF CONCERNS AND NEED FOR CLARIFICATION**

The following items are questions that need clarification and answer to ensure a correct understanding and application of the framework criteria.

### Recognition & Reward

1. How will Finance “recognize departments that perform beyond the minimum required level”? (pg 11, last line)

### Definition Of Acceptable

2. It is not clear what a minimum acceptable rating is. Does a LOW rating mark you as unacceptable and MED/HIGH as acceptable? It is not stated what these ratings mean.
3. What happens if the department cannot/will not address the findings and/or comply with the oversight requirements? What are the consequences?
4. What if the project/dept disagrees with the oversight’s recommendations due to a misunderstanding on the part of the oversight contractor? (pg 27, Tracking, 2<sup>d</sup> sentence) What if the recommendations are not cost-effective or are not funded by DOF?

### Funding Items

5. Where will funding for this independent oversight come from? (letter, pg 2)
6. Is DOF willing to approve funding for QA and IV&V on all high criticality projects? (items 8 and 12, Systems Engineering, table 3.1)
7. If DOF will not fund training, this criterion is not fair to use. (pg 18, “Training and Certification”).
8. If DOF/DPA is not willing to allow such positions, the “Exec Level Visibility” and “Centralization of PM support” criteria are not fair to use. (pg 17, IT Mgmt Structure, 1<sup>st</sup> table)
9. Will DOF allow for mitigation/contingency budget/funds? (pg 23, Risk Action Planning, last sentence)
10. Some of the Table 3.1 items will have to be built into contracts to ensure appropriate data and visibility, particularly the fixed price contracts. Is DGS going to modify its standard model contract language to support and include this? (e.g., defect tracking no later than requirements specification, access to hours and costs)
11. How to budget for QA vs IV&V vs. IPOC (10-15% split amongst all 3 contractors)? What’s the delineation of responsibilities and how much overlap of activities is allowed?

### Definition Items

12. Define “project management software”? (pg 14, item 2 in Planning and Tracking, Table 3.1). Must this be a scheduling package (i.e., MS Project) or can projects use Excel?
13. Clarify “detailed requirements specification” (item 3 in Procurement, Table 3.1).

- Does this eliminate the contractor proposing a solution (a la FTB), or can this be a detailed business requirement?
14. Clarify “material participation of outside expertise”, given the current view towards consultants. (Item 4 in Procurement, Table 3.1)
  15. Who qualifies to do an “independent review of estimates”? Does the oversight entity count? What about QA and IV&V? What about control agency and federal review of APDs, BCPs, SPRs? (Item 10 in Planning and Tracking, Table 3.1)
  16. Clarify “user approval/signoff” (item 2 in Systems Engineering, table 3.1). All users/counties? Just Sponsor?
  17. Clarify “use of requirements mgmt software” (item 4, Systems Engineering, table 3.1). Can this be MS Access, Excel or must it be a RequisitePro, DOORS, etc.

Miscellaneous Items

18. How will projects be expected to account for state staff hours expended? (Pg 14, item 4 in Planning and Tracking, Table 3.1)
19. How will projects be expected to account for state costs associated with the project (as opposed to just contractor costs)? (Pg 14, item 7 in Planning and Tracking, Table 3.1)
20. How many levels of independent oversight will there be on a high criticality project? Is this cost effective? (project QA, IV&V, dept ovst, agency ovst, DOF ovst, Feds?) (pg 25, 1<sup>st</sup> paragraph)
21. How can the oversight contractor accurately report on Budget/Cost? (Appendix G, pg 64) The project always supplies this data, so it cannot be objectively reported or obtained. In addition, project financial status is not always available (e.g. PeopleSoft) and can be lagging by 3-5 months.
22. How will lessons learned be handled given the legal issues? (Item 19 in Planning and Tracking, Table 3.1)
23. Is “formal enterprise architecture planning” really a project responsibility? Shouldn’t this be more towards compliance with the department’s strategic IT plan? Is this an SID-wide item or Cannery-wide or CDSS-wide? (Item 18 in Planning and Tracking, and item 10 in Systems Engineering, Table 3.1)
24. If the project has a QA, IV&V, and an IPOC, do they all have to be from different companies? Can the same company be performing different functions on different projects within the same organization (i.e., QA on project A, IPOC on project B, IV&V on project C)? Or should the department hire a single IPOC for all the projects?
25. Do the top 5 risks have to correspond to the project’s risk list? Are the 2 lists independent or tied together? (Appendix G, pg 66)